OUTLINE
for Iowa Water Quality Project Applications

This **outline** of application procedures is intended to provide uniform guidance for the preparation of project applications **specifically to address nonpoint sources (NPS) of pollution that affect water quality in Iowa.** Applications developed under these guidelines can be used for various water quality protection programs such as: DNR/EPA Section 319, IDALS-DSC Water Protection Fund projects, and the USDA EQIP program. Each program may have additional requirements, but this should serve as a good base.

If the project you are developing is not addressing nonpoint source water quality issues, some of the water quality aspects of this outline may not apply directly to your project. In those areas, your application will need to focus on the specific resource concerns your project will address (such as flooding, erosion, etc.). If your project is addressing natural resource concerns other than water quality, please also refer to the guidance for the Watershed Protection Program fund (WSPF) in Attachment 7.

Nonpoint source water quality project applications should address all major nonpoint sources of contamination impacting the water resource to be protected. Proposed project components should *reduce the pollutant load* to the water resource from identified sources, and should have a likelihood of landowner acceptance. As appropriate, proposed projects should demonstrate new or innovative approaches that can be used to address NPS pollution.

There is no minimum length of the application, however, the *maximum* number of pages allowed is 15, including a two-page Project Executive Summary. A limited number of budget sheets and maps may be attached as appendices and do not count towards the 15 page maximum. No other appendix materials should be submitted. The application should address each component completely and concisely.

Each project application should download and use the appropriate cover page and budget sheets. Do not attach separate covers or bindings, as these are only an inconvenience to the reviewers. Staple each copy of the application in the upper left corner only.

The project application should be divided into two major parts:

> **Part I-Background Information**: to identify, describe and quantify the water quality problems, watershed characteristics, and the best management practices (BMPs) necessary to reduce the source and effects of NPS pollution.
>
> **Part II-Water Quality Protection Plan**: to describe planned project goals and objectives, activities, schedules, evaluation criteria, budgets, participating entities and project outputs.

TITLE PAGE AND PROJECT EXECUTIVE SUMMARY

Each application should use the attached cover page (title page). It provides the following information:

- Project Title (4 – 6 word title, which provides a distinct description of project)
- District(s) submitting the application

- Contact Person (Name, Address, Phone Number, etc. to receive all correspondence)
- Total funding requested for the life of the project from the Section 319,WPF, and/or WSPF Programs (application should only list total funding being requested, if project is selected for funding IDNR and DSC will determine amount to be provided by each specific funding program)
- Project Executive Summary: The remaining space on the cover page and one additional page should be used to provide a summary of the project. This summary should provide basic information regarding the project and answer the questions identified on the cover page (Attachment 2).
- The cover page should be signed by the SWCD Chair, to indicate commissioner approval and support of the project.

PART I – BACKGROUND INFORMATION

Background information for the project application should identify the water resource to be protected, describe the type and extent of the existing water quality problems, quantify the amount of pollutant(s) reaching the waterbody, provide relevant details of the characteristics of the watershed or project area, and describe the BMPs that will be necessary to correct the water quality problems.

Water Resource and Related Problems:

The project application should identify the specific water resource to be protected by the project. The resource may be a public lake, municipal water supply, stream or river segment, marsh, groundwater aquifer, or other water resource of state or local significance. Information provided should include:

- Name of waterbody
- Location
- Size
- Watershed area
- Importance of waterbody as a resource (coldwater trout stream. drinking water supply, recreation, etc.)
- When constructed
- Managing agency or organization
- Public Uses and Extent of Use (user days, etc.)
- Indicate if the waterbody is on Iowa's FY2002 Section 303(d) list of impaired waterbodies and if a TMDL has been developed or is scheduled to be developed.

The application should identify the water quality problems being encountered and describe the impact that these problems are having on the use of the water resource. These impacts may be in a variety of forms:

- Loss of surface area or volume due to sedimentation
- Algal or nuisance plant growth
- Drinking water standards violations
- Other water quality standards violations
- Increased water treatment costs
- Loss of habitat

- Loss of recreational value
- Reduced recreational use

Local observations of water quality impairments or decreased resource use, or other similar information is appropriate for the project application, if they indicate the decline in the water resource is a result of NPS pollution. The Department of Natural Resources' assessment of designated uses and levels of use impairment for lakes and streams of the state may also be helpful in providing information for this section. Such designations can be found in the States 305b assessment at http://www.iowadnr.com/water/tmdlwqa/wqa/305b.html

Pollutants causing the impairment may include:

- Sediment
- Nutrients
- Pesticides
- Animal wastes
- Bacteria from human or animal sources

The application being developed may be a part of a larger effort to enhance the water resource or its use. Agencies or organizations may have already contributed to the development or improvement of the water resource. If so, provide information detailing this. Other plans may also still be in the development stages, but may be contingent on correction of existing water quality problems. If so, also provide this information.

Quantify Current Level of Pollutant Loading:

Before a project can determine what needs to be done to improve water quality, the project must first quantify the amount of pollutant loading that is currently occurring. For example:

- 25,000 tons of sediment is delivered on an annual basis
- 1500 lbs./year of phosphorus
- Partially treated septic effluent from 50 improperly functioning household septic systems

Determining such loading can be difficult, and inclusion of detailed loading information may not be possible in every project application. Part of the TMDL planning process is to develop such numbers, therefore if your project is involved in the TMDL development process, these numbers may have already been calculated and should be included in this application. If your project is scheduled for TMDL development in the near future, the application should reflect these numbers will soon become available and will be incorporated into the project at a later date. Besides a TMDL, there are other means in determining pollutant loading. Completing such calculations often requires a certain degree of technical expertise and prior experience. Assistance may be available through various state and federal natural resource related agencies and private sector providers.

There are other less technical means that projects can use to provide at least a rough estimate of such pollutant loading. For example:

- The lake's surface area has decreased 35% over the past 25 years
- Phosphorus concentrations increased from 65 ppm to 135 ppm in the last 20 years
- The frequency of pesticide detections in groundwater has increased two-fold.

Even though such numbers fail to totally quantify how much pollutant is being delivered, the numbers provide some estimate as to the magnitude of water quality problems the project proposes to resolve.

Watershed Characteristics:

The project application should provide relevant information concerning the project size, geographic setting, landowners, land use, and other watershed characteristics that affect the project. This information should be quantified as well as possible.

Land use in the watershed or project area should be detailed as accurately as possible. Provide the following information:

- Cropland
- Pasture
- Timber
- Publicly owned areas
- Number of farmsteads or landowners
- CRP acres
- Urban
- Other uses

Additional information relevant to the implementation of the Food Security Act (FSA) may be relevant, such as:

- Highly erodible land acres
- FSA plan coverage and status of implementation
- Wetland determination status

The application should provide general information on the following topics, focusing on those items that impact water quality:

- Soils
- Climatic conditions
- Geologic characteristics
- Typical cropping patterns
- Management practices
- Existing BMPs

Livestock information for the project area should be described and quantified as needed, including:

- Type and number of livestock
- Existing livestock facilities

- Permitted animal waste facilities
- Animal waste storage and handling methods
- Animal waste land application methods and rates

Non-agricultural sources:

- Industries that are impacted by poor water quality
- Industrial sources of pollution
- Urban or residential areas impacted by, or impacting water quality

A map of the watershed or project area should be included in the project application.

With increasing frequency, water quality specialists are turning to GIS-based programs to collect and analyze basic field level data. Besides the obvious uses (landuse, soil inventory, and topography), GIS programs are now available that estimate potential soil losses, rank potential nonpoint pollution source areas, and even predict sediment delivery. Used collectively, such data can then be used to more effectively estimate the number of needed BMPs, develop realistic budgets, and set achievable goals and objectives.

DNR is prepared to provide applicants with the following watershed-scale maps for the watershed being considered as a potential project:

- Basic Land Feature Map – identifies communities, major roads, streams, etc.
- Land Cover Map – identifies and quantifies acres of cropland, grassland, timber, etc.
- Potential Rill & Sheet Erosion based upon RUSLE Calculations

To request GIS assistance from DNR, please contact Chris Ensminger at 515-242-6010 or at chris.ensminger@dnr.state.ia.us.

Practices Needed to Protect Water Quality:

This section of the application should describe the types and quantities of practices necessary to address the water quality problem. For example:

- Terraces are needed on 1,200 crop acres
- 10 livestock producers need animal waste control facilities
- 2,000 crop acres will benefit from nutrient management systems

At this point in the project application, quantify the practices necessary to fully address the water quality problems, but do NOT set application goals for the project itself.

PART II – WATER QUALITY PROTECTION PLAN

Project Goals and Objectives

Project objectives should be set to address the water quality problems identified in the background portion of the project application. Make project objectives measurable and realistic.

Objectives should be significant enough to result in meaningful water quality improvements, however objectives like 100% participation or 100% application of practices are generally not realistic. Projects are encouraged to seek advice from experienced professionals when setting objectives to ensure that project implementation will result in the desired water quality improvements. Otherwise, a project may meet its implementation goals, but still fail to bring about the desired water quality improvements.

Objectives should address both pollutant load reduction goals and implementation of BMPs, or other activities that will be used to achieve the load reduction goals. Furthermore, the objectives contained in the project application should reflect what can realistically be accomplished within the time frame of the proposed project. Examples of project objectives are:

- Reduce nitrogen application rates on corn acres by 25%
- Control livestock access on 50% of the stream corridor
- Install terraces on 750 acres of highly erodible land within ½ mile of the lake
- Reduce annual sediment delivery to the lake by 50%

In selecting the BMPs and other practices to be used in the project, keep in mind that not all areas of a watershed contribute equally to the water quality problems. The project should focus on critical areas or problems that have a major impact on the water resource, and the application should identify how these critical areas or problems will be dealt with by the project. Examples of critical areas or problems include:

- Areas with high sediment delivery to the water resource
- Gullies
- Livestock with access to water resources
- Feedlots in proximity to the water resource
- Intensively cropped land in proximity to the water resource
- Abandoned wells
- Sinkholes

Project Description:

In determining the project's components, take into account information from landowner contacts related to proposed project activities, surveys, local experience, and/or the experience of similar projects. The project description should include information on:

- Which BMPs or practices will be offered
- Quantity of each BMP or practice necessary
- Total cost to implement each BMP or establish each practice
- Likelihood of landowner acceptance
- Total cost to implement each BMP and the cost-share rates needed to achieve desired adoption rates. Recognize that not all BMPs require a cost-share or financial incentive to implement.

Projects offering producers per acre financial incentives as part of a nutrient management program are to administer their programs in accordance with current Nutrient Management (590) specifications as outlined in the NRCS Field Office Technical

Guide. Applications offering innovative nutrient management efforts inconsistent with the 590 specification will only be considered if the activities are limited to information & education or in-field demonstrations.

Planned information and education activities to promote the project and encourage public interest and participation should be identified. These activities may include:

- News releases
- Field days
- Project advisory committees
- Public presentations
- Radio spots
- Public reports
- Newsletters
- Demonstration Plots
- Outdoor classrooms
- Photography or videos

Link to the Iowa Nonpoint Source Management Program:

The Iowa Nonpoint Source Management Program (NPSMP) is a DNR document, dated September 2000, that outlines Iowa's nonpoint source pollution control program and provides information on what is currently being done, and what Iowa intends to do in the future to address its' nonpoint source problems. The project application must:

- clearly identify how the project relates to one or more of the priority activities listed in the NPSMP and/or how it relates to the list of priority waters (page 12 of the NPSMP).
- identify how the project works towards completion of the goal(s) of the NPSMP (pages 78 – 89).

Link to Status of Total Maximum Daily Load (TMDL) Development:

Section 303(d) of the Clean Water Act requires impaired waters of a state be listed on the state's 303(d) list if the impairment will not be corrected through existing pollution control programs. Waters placed on a state's 303(d) list must be prioritized and a schedule developed for establishing TMDLs for each waterbody and pollutant. A list of Iowa's current 303(d) listed waters, including the pollutants identified as causing the impairment can be found at http://www.iowadnr.com/water/tmdlwqa/wqa/303d.html.

For the FY2004 Section 319 funding, EPA guidance requires nearly half of the funding received by the IDNR be targeted to water quality projects on waters included in the FY2002 Section 303(d) list of impaired waters. In addition, priority will be given to applications addressing a waterbody for which a TMDL has been completed or is being developed. A link to the FY2002 Section 303(d) list is included in Attachment 6.

If the project is intended to implement activities which are predicted to be necessary and will be included in a TMDL, once developed, the application should acknowledge the status of the TMDL and provide a commitment to amend the scope of work once the a TMDL is finalized.

For assistance in developing this part of the project application, contact the DNR Nonpoint Source Program staff.

Schedule:

Develop a realistic schedule for project implementation showing planned activities for each project year, who will perform the activities, and projected completion dates. Examples of types of activities that should be listed in a schedule include:

- Hire staff
- Develop an annual workplan
- Conduct organizational meetings
- Prepare conservation plans (number of plans and acres/year)
- Conduct integrated crop management or other farm management meetings
- Conduct major work activities (separate out by each activity)
- BMP goals (quantify by type and number of BMP implementations/year)
- Prepare and submit monthly, quarterly and annual project reports

Measures of Success:

Examples of ways to measure success of the project would be:

- Load reductions - Sediment and nutrient load reduction calculations resulting from BMP implementation is required annually
- Implementation of demonstrated or recommended BMPs
- Number of farmer contacts
- Changes in attitudes or knowledge levels of project participants – requires conducting pre-project and post-project surveys
- Reduced use of nutrients and/or pesticides
- Photographic evidence of changes in erosion or improved water quality
- Education and public information activities
- Number of individuals participating.

Water quality monitoring is typically used in projects as an information and education tool, rather than to demonstrate project success. The primary reason for this is that for monitoring to show water quality improvements or to identify trends generally requires a detailed and comprehensive monitoring plan, pre-project baseline data from which to measure progress, and a long monitoring period (10 or more years), not to mention the high cost of extra staff and training.

There are alternatives. One is to limit the scope of the monitoring to habitat evaluation or biomonitoring, which tends to respond more quickly to BMP implementations, provided the appropriate expertise is available to the project to properly conduct the surveys and interpret the results.

The second involves organizations like IOWATER (http://www.iowater.net) whose primary mission is to establish and support a statewide water quality monitoring program. This program has several advantages, including:

- To overcome the cost and expertise issues, IOWATER recruits, trains and motivates local volunteers.

- Once established, local monitoring efforts often last well beyond the length of the project, thereby providing the desired long-term monitoring.
- The program provides projects with addition information & educational expertise to teach stakeholders more about how water quality issues can impact their lives.

Evaluation and Feedback Mechanisms:

It is important to evaluate the project regularly to determine if the project objectives are being met. The application should identify the methods by which the progress and achievements of the project will be reviewed, and needed changes will be made.

One method of review is to compare the status of the "measures of success" to the original project objectives. Periodic public meetings can also be successful in evaluating public interest and public perceptions of the success of the project. Quarterly and annual project reports can also be used to evaluate the project.

Participating Agencies and Organizations:

List and discuss the role of each agency, government, college or private organization that is materially participating in the implementation of the project. Participation can be in the form of financial contribution, technical assistance, volunteer labor, supply donations, or other types of support. Also describe other activities that are also occurring in the project area that contribute or are related to the project.

Letters of support, which include resource commitments, from cooperating agencies or organizations are effective ways of showing support for the proposed project. Letters of support should clearly identify what the contribution to the project will be from that agency or organization. Letters of support are not to be submitted with the application, but should be kept on file and be provided if requested.

Project Outputs:

Identify the products that will result from the project activities. These products may include:

- Workplans describing proposed project activities for each year
- Monthly, Quarterly, Annual and Final project reports
- Achievement of project goals and objectives
- Load reductions – sediment and nutrient load reduction calculations are required annually
- Materials developed from public information and education activities
- Results of water quality monitoring, if conducted
- Surveys or other products showing how the project changed participants' attitudes, knowledge levels, and/or actions (good or bad)
- Future activities that will be conducted after project completion

Project Costs and Funding Sources:

Estimate personnel costs for salary and fringe benefits. Identify the percent "full time equivalent (FTE)" and title for each staff position.

List costs for each individual activity (including BMPs) to be conducted during the project. For BMPs, list the cost of each BMP and the percent cost-share that will be offered for each BMP. Estimate the quantities (and costs) of each BMP or other practices that will be implemented during the course of the project.

List travel, training, supplies and other costs relevant to the project.

Also estimate contributions from other agencies or organizations that are expected to contribute to implementation of the project. Where possible, note the agency or organization that will be providing the contribution (see attachments).

Provide a separate budget for each year of the proposed project, with all costs itemized on the attached project budget sheets. Also complete project budget sheets showing the total itemized costs for the life of the project (see Attachments 4 and 5.)

Note: The project application should only identify the total funding being requested from the Section 319, WPF, and/or WSPF programs, not the amounts being requested from each individual program. If your project is selected for funding, DNR and DSC will determine the amount of funding to be provided by each program.